Atty. Ref.: EPARK-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant

e.PARK Systems LLC

International Appl.

PCT/US00/22856

International Filing Date :

19, January 2000

Title of Invention

APPARATUS FOR ELECTRONIC PARKING

SYSTEM

U.S. Patent and Trademark Office P.O. Box 2327 Arlington, VA 22202

CERTIFICATE OF EXPRESS MAIL

Sir:

I hereby certify that the PCT application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope addressed to: U.S. Patent and Trademark Office P.O. Box 2327, Arlington, VA 22202 on February 8, 2002.

Hilda A. Abreu

EL833448907US

("Express Mail" Mailing Label Number")



From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner **US Department of Commerce** United States Patent and Trademark Office, PCT 2011 South Clark Place Room CP2/5C24 Arlington, VA 22202

ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 07 May 2001 (07.05.01) International application No. Applicant's or agent's file reference **EPARK-1-PCT** PCT/US00/22856 Priority date (day/month/year) International filing date (day/month/year) 21 August 2000 (21.08.00) 19 August 1999 (19.08.99) **Applicant** IVERS, Kevin

1.	The designated Office is hereby notified of its election made:
	X in the demand filed with the International Preliminary Examining Authority on:
	15 March 2001 (15.03.01)
	in a notice effecting later election filed with the International Bureau on:
2.	The election X was
2.	was not
	made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland

Authorized officer

Zakaria EL KHODARY

Telephone No.: (41-22) 338.83.38 Facsimile No.: (41-22) 740.14.35



PCT

REC'D 18 DEC 2001

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

	•	
0	\sim	$\boldsymbol{\tau}$

(PCT Article 36 and Rule 70)

12

			<u> </u>			
Applicant's or agent's file reference EPARK-1-PCT	FOR FURTHER ACTI	ON See Notifi Preliminary	cation of Transmittal of International Examination Report (Form PCT/IPEA/416)			
International application No.	International filing date	(day/month/year)	Priority date (day/month/year)			
PCT/US00/22856	21 AUGUST 2000		19 AUGUST 1999			
International Patent Classification (IPC) IPC(7): G07B 15/00 and US Cl.: 705	or national classification /418; 705/13	and IPC				
Applicant E.PARK SYSTEMS LLC						
Examining Authority and is 2. This REPORT consists of a This report is also accom	total of sheets.	licant according to	ription, claims and/or drawings which have			
been amended and are the (see Rule 70.16 and Sect	ne basis for this report and ion 607 of the Administra	L'or sheets containir ative Instructions u	ng rectifications made before this Authority. Indeed the PCT).			
These annexes consist of a to	sheets.					
3. This report contains indication	ns relating to the follow	ing items:				
I X Basis of the repo	ort					
II Priority	II Priority					
Non-establishment of report with regard to novelty, inventive step or industrial applicability						
IV Lack of unity of invention						
V X Reasoned statemen						
VI Certain documents						
VII X Certain defects in	the international applicat	ion				
VIII X Certain observation	ns on the international ap	pplication	_			
D. C. Mission Cil. Association		Date of completion	on of this report			
Date of submission of the demand		Date of completion	or this report			
15 MARCH 2001		05 NOVEMB				
Name and mailing address of the IPEA	\/US	Authorized officer	yttele C			
Commissioner of Patents and Trade		EDWARD R	COSIMANO			
Washington, D.C. 20231	1					
Facsimile No. (703) 305-3230		Telephone No.	(703) 308-9783			



Lational application No.	
PCT/US00/22856	

Basis of the report	
. With regard to the elements of the international app	plication:*
the international application as original	
<u> </u>	
	, as originally filed
pages NONE	, filed with the demand
pages NONE	, filed with the letter of
x the claims:	, as originally filed
pages	, as amended (together with any statement) under Article 19
pages39-41	, filed with the demand
	led with the letter of
x the drawings:	as originally filed
pages 1-8	, as originally filed , filed with the demand
pages NONE pages NONE	, filed with the letter of
pages	
X the sequence listing part of the description	on:
pages NONE	, as originally filed , filed with the demand
pages NONE	, filed with the demand
pages NONE	, filed with the letter of
the language of publication of the inte	rnational application (under Rule 48.3(b)).
the language of the translation furnished for or 55.3).	or the purposes of international preliminary examination (under Rules 55.2 ar
 With regard to any nucleotide and/or amino preliminary examination was carried out on 	o acid sequence disclosed in the international application, the international the basis of the sequence listing:
contained in the international applicati	ion in printed form.
filed together with the international ap	
furnished subsequently to this Authori	ty in written form.
furnished subsequently to this Authori	
LJ	nished written sequence listing does not go beyond the disclosure in the
The statement that the information recorded been furnished.	ed in computer readable form is identical to the writen sequence listing has
The amendments have resulted in the	cancellation of:
X the description, pages NON	
v and description, pages	<u> </u>
the claims, 140s.	
Mic drawings, sheets/rig	
) the amendments had not been made, since they have been considered to go
	ed in the Supplemental Box (Rule 70.2(c)).** the receiving Office in response to an invitation under Article 14 are referred to
in this report as "originally filed" and are not	t annexed to this report since they do not contain amendments (Rules 70.1)
and 70.17).	dmants must be referred to under item I and annexed to this report.



Ational application No.

PCT/US00/22856

V.	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial	applicability
	citations and explanations supporting such statement	

1.	statement			
	Novelty (N)	Claims	1-33	YES
	,	Claims	NONE	NO
	Inventive Step (IS)	Claims	11, 12, 16 & 24-33	YES
		Claims	1-10, 13-15 & 17-23	NO NO
	•			
	Industrial Applicability (IA)	Claims	1-33	YES
		Claims	NONE	NO

2. citations and explanations (Rule 70.7)

- 1. Claims 1-10, 13-15 & 17-23 lacks an inventive step under PCT Article 33(3) as being obvious over either Tomer (4,717,815) or Haung (4,847,776) in view of the article "A Meter That Can't be Beat".
- In regard to claims 1, 2 & 17-19, either Tomer ('815) or Haung ('776) disclose an electronic parking system that is to be used with in a vehicle and must be visible from without the vehicle. The parking system of either Tomer ('815) or Haung ('776) include a housing that encases a microprocessor/controller, a display device, and at least one monetary switch. Further, both Tomer ('815) and Haung ('776) require the accurate keeping of time. To provide this time signal, either Tomer ('815) nor Haung ('776) disclose the use of a crystal electrically coupled to the microprocessor/controller, (Tomer ('815) dice 60 in fig. 2 and Haung ('776) at column 3, lines 2-9).
- Neither Tomer ('815) nor Haung ('776) disclose the use of a battery to power the parking meter. However, the article "A Meter That Can't be Beat" discloses the use of a battery to provide operating power to the disclosed parking meter. Since, either Tomer ('815) or Haung ('776) require a source of operating power, it would have been obvious to one of ordinary skill at the time the invention was made that the parking systems of either Tomer ('815) or Haung ('776) could be powered by a battery.
- 1.8 In regard to claims 3 & 20-22, neither Tomer ('815) nor Haung ('776) disclose the use of an optical/infrared communications device for communicating information between the meter and an external device. However, the article "A Meter That Can't be Beat" discloses the use of a external device to extract parking information from the parking meter. Such a system as is common would include a transmitting device and a receiving device. When a vehicle using the meter departs the meter the article "A Meter That Can't be Beat" discloses the accurate determination and recording of parking revenue and parking time for each vehicle using the metering device. This information is the downloaded from the meter to be analyzed and produce reports. Since, it is (Continued on Supplemental Sheet.)



ational application No.

PCT/US00/22856

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

- 1. The drawings are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or content thereof:
- as disclosed at page 11, line 7, fig. 3 lacks "New Day Delineation Hour (58)".
- 1.2 applicant must use reference numbers when describing figures 7 & 9.
- 1.3 the subject matter of claim 1+ in regard to either (A) the motion detecting means or (B) a flow chart indicating the automatically terminating active parking, is not depicted in the drawings.
- 2. The description is objected to as containing the following defect(s) under PCT Rule 66.2(a)(iii) in the form or contents thereof:
- 2.1 as can be seen in fig. 1, at page 9, line 7, "RAM 24" should be -ROM 24--.
- the description of fig. 4 at pages 12-14 lacks an explicit reference to reference numbers 100, 102, 104, 105, 110, 112, 114, 118, 120, 122, 124, 128, 130 & 132.
- the description of fig. 4 at pages 12-14 lacks an explicit reference to how the program proceeds after boxes 102, 110, 114, 118, 122 & 130 if the inquiry is either "YES" or "NO".
- 2.4 the description of fig. 4 at pages 12-14 lacks an explicit reference to how the program proceeds after box 106 if the inquiry is "YES".
- 2.5 the disclosure lacks an explicit reference to fig. 5 as this figure is described at pages 14-20.
- 2.6 the disclosure lacks an explicit reference to fig. 6 as this figure is described at pages 20-21.
- the disclosure lacks both an explicit reference to fig. 7 as well as a description of this figure that uses the reference numbers requested above in section 1.2 and references each of the depicted flow paths.
- 2.8 the description of fig. 9 at pages 28-30 lacks an explicit reference to reference numbers requested above in section 1.2. (Continued on Supplemental Sheet.)



ational application No.

PCT/US00/22856

VIII. Certain observations on the international application

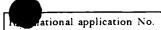
	ing observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully by the description, are made:
1.	Claim 29 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because the claim 29 is

Applicant's use of the word "potable" at claim 29, line 1, is confusing since from the context of this claim this word 1.1

could be either -potable- or -portable-.

indefinite for the following reason(s):





PCT/US00/22856

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):

desirable to prevent the theft of parking time, it would have been obvious to one of ordinary skill at the time the invention was made that the parking systems of either Tomer ('815) or Haung ('776) could be modified to include a suitable communication method as taught by the article "A Meter That Can't be Beat".

- 1.4 In regard to claims 4-10 & 15, it is noted that computers include the use the components recited in these claims in one form or another. Hence, it would have been obvious to one of ordinary skill at the time the invention was made that the parking systems of either Tomer ('815) or Haung ('776) as modified by the article "A Meter That Can't be Beat" would contain suitable components to carry out the desired functioning of a parking system.
- 1.5 In regard to claim 14, neither Tomer ('815) nor Haung ('776) disclose the use of a motion detector to terminate the meter timing of a parking interval when motion has been detected. However, the article "A Meter That Can't be Beat" discloses the use of a motion detector to terminate the meter timing of a parking interval when motion has been detected. By terminating the timing of a parking interval in this manner the permits an accurate determination of parking revenue and parking time for each vehicle using the metering device. Hence, it would have been obvious to one of ordinary skill at the time the invention was made that the parking systems of either Tomer ('815) or Haung ('776) could be modified to use a motion detector to terminate the meter timing of a parking interval when motion has been detected as taught by the article "A Meter That Can't be Beat".
- 1.5 In regard to claim 23, since it is undesirable in the meter system of either Tomer ('815) or Haung ('776) as modified by the article "A Meter That Can't be Beat" to lose or corrupt the parking data, it would have been obvious to one of ordinary skill at the time the invention was made that the meter system of either Tomer ('815) or Haung ('776) as modified by the article "A Meter That Can't be Beat" would include a means to prevent corruption of that meter's data during the downloading process.
- 3. Claims 11, 12, 16 & 24-33 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest:
- A) in regard to claim 11, the use of temperature sensing device formed from a NTC thermistor, and a capacitor and resister connected in parallel. Claim 12 meets the criteria set out in PCT Article 33(2)-(4) for the same reason.
- B) in regard to claims 16 & 27, the use of a display that includes a corner cube to reflect light back to it's source. Claims 28 & 29 meet the criteria set out in PCT Article 33(2)-(4) for the same reason.
- C) in regard to claim 24, the location of the transceiver in a parking facility.
- D) in regard to claim 25, the transceiver wirelessly transmitting data from a parking facility.
- E) in regard to claim 30, the use of crypto-grade random number generator to generate codewords used to program a parking meter. Claims 31-33 meet the criteria set out in PCT Article 33(2)-(4) for the same reason.

	NEW	CITATIONS	
NONE			

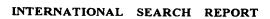
- VII. CERTAIN DEFECTS IN THE APPLICATION (Continued):
- the description of fig. 9 at pages 28-30 lacks an explicit reference to how the program proceeds after the decision box if the inquiry is either "YES" or "NO".
- 2.10 The use of various trademark(s) at pages 31-32 has been noted in this application. Any trademarks should be capitalized wherever they appear and be accompanied by the generic terminology.
- 2.10.1 Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.
- 2.11 the disclosure lacks an explicit reference to figs. 11A & 11B as these figures are described at pages 31-32.



In national application No.

PCT/US00/22856

Supplemental Box (To be used when the space in any of the preceding boxes is not sufficient)				
Continuation of: Boxes I - VIII Sheet 11				
the disclosure lacks an explicit reference to fig. 12 as this figure is described at pages 32-33.				
-				



International application No. PCT/US00/22856

	· · · · · · · · · · · · · · · · · · ·		
IPC(7) US CL	SSIFICATION OF SUBJECT MATTER :G07B 15/00 :705/418; 705/13 to International Patent Classification (IPC) or to both	national classification and IPC	
	DS SEARCHED		
Minimum d	ocumentation searched (classification system follower	ed by classification symbols)	
	340/932.2; 368/7, 90; 705/13, 50, 60, 61, 77, 400, 4		
None None	tion searched other than minimum documentation to th	e extent that such documents are included	in the fields searched
Electronic d	lata base consulted during the international search (n	ame of data base and, where practicable	, search terms used)
C. DOC	UMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where ap	propriate, of the relevant passages	Relevant to claim No.
Y	US 4,717,815 A (TOMER) 05 Januar	y 1988, see abstract.	1-21 & 25-28
Y	US 4,847,776 A (HUANG) 11 July 1	989, see abstract.	1-21 & 25-28
A	FR 2637999 A1 (SAGLIO et al) 20 A	pril 1990, see abstract.	1-21 & 25-28
Α	US 5,309,414 A (CHIU) 03 May 199	4, see abstract.	1-21 & 25-28
Α	JP 07-210716 (NAKAI) 11 August 19	95, see constitution.	1-21 & 25-28
Α	US 5,442,348 A (MUSHELL) 15 Aug	gust 1995, see abstract.	1-21 & 25-28
X Furth	er documents are listed in the continuation of Box C	See patent family annex.	•
"A" doe	ecial categories of cited documents: cument defining the general state of the art which is not considered	"T" later document published after the inte date and not in conflict with the appli the principle or theory underlying the	ication but cited to understand
	be of particular relevance lier document published on or after the international filing date	"X" document of particular relevance; the	claimed invention cannot be
cite	cument which may throw doubts on priority claim(s) or which is and to establish the publication date of another citation or other	considered novel or cannot be consider when the document is taken alone	·
	ecial reason (as specified) cument referring to an oral disclosure, use, exhibition or other ans	"Y" document of particular relevance; the considered to involve an inventive combined with one or more other such being obvious to a person skilled in the property of the property of the property of the property of property	step when the document is documents, such combination
	cument published prior to the international filing date but later than priority date claimed	"&" document member of the same patent	
	actual completion of the international search BER 2000	Date of mailing of the international sea	rch report
	nailing address of the ISA/US	Authorized officer	Hand
Box PCT	ner of Patents and Trademarks	EDWARD R COSIMANO	7,3,30
Facsimile N	a, D.C. 20231 o. (703) 305-3230	Telephone No. (703) 308-9783	Í

INTERNATIONAL SEARCH REPORT

International application No. PCT/US00/22856

C (Continua	tion). DOCUMENTS CONSIDERED TO BE RELEVANT	—··· · · · · · · · · · · · · · · · · ·
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	"A METER THAT CAN'T BE BEAT": Advanced Transportation Technology News; 01 May 1996, v3, n1, see lines 1-28.	1-21 & 25-28
A	US 5,642,119 A (JACOBS) 24 June 1997, see abstract.	1-21 & 25-28
A	US 5,648,906 A (AMIRPANAHI) 15 July 1997, see abstract.	1-21 & 25-28
A, P	US 6,102,285 A (ELIAS) 15 August 2000, see abstract.	1-21 & 25-28
L		



INTERNATIONAL SEARCH REPORT

International application No. PCT/US00/22856

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2. X Claims Nos.: 22-24 because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically: 2.1 This application contains two different claims numbered as claim 22. 2.2 Since there are two claims numbered as 22, the scope of claims 23 & 24, which depend from claim 22 can not
2.2 Since there are two claims numbered as 22, the scope of claims 23 & 24, which depend from claim 22 can not be determined.
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows:
1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

- WO 01/13339 21. A system as in claim 20, wherein said second data transferring means of said transceiver comprises a high power infrared light emitting diode and a phototransistor for sending and receiving data from said first transferring means of said in-car parking meter.

5

22. A system as in claim 21, wherein said transceiver is portable, said transceiver being carried by a parking enforcement official to read data from said in-car parking meter.

10

22. A system as in claim 21, wherein said transceiver is formed to receive said in-car parking meter as to block ambient light during communication between said first transferring means and said second transferring means.

23. A system as in claim 22, wherein said transceiver is positioned at an

entrance to a parking facility.

A system as in claim 23, wherein said transceiver wirelessly transmits data from said parking facility to a remote location.

15

25. A system as in claim 19, wherein said display means is a liquid crystal display including a controllable segment, said segment allows light to pass through said display means when off and blocks light when said segment is on.

20

25

26. A system as in claim 25, further comprising a corner cube to reflect light back to its source, said corner cube being disposed behind said segment of said display means, whereby upon light being directed at said corner cube said segment will be turned on and off to passively transmit data from said in-car parking meter.

27. A system as in claim 26, further comprising an external receiver, said external receiver comprising a light point source and a photodetector which when directed toward said in-car parking meter passively receives information from said incar parking meter.

28. A system as in claim 27, wherein said external receiver is potable, said external receiver being carried by a parking enforcement official to read data from said in-car parking meter.

29. A method of generating codewords to program an electronic apparatus with monetary credits, said method comprising the steps of:

generating a serial number associated with said electronic apparatus;

providing a hardware based crypto-grade random number generator;

generating a first random number table from said crypto-grade random number generator;

5

10

15

20

generating a second random number table from said crypto-grade random number generator;

indexing said serial number to a first entry in said first random number table and to a second entry in said second random number table;

summing said first entry and said second entry resulting in a hexadecimal sum; and

converting said hexadecimal sum into a first seven digit binary coded decimal value codeword.

30. The method of claim 29, further comprising the step:

providing a second seven digit binary coded decimal codeword whereby said second codeword validates said first codeword.

- 31. The method as in claim 30, further comprising the step of providing a storage means for storing a plurality of codewords, said storage means comprises a microprocessor and non-volatile memory.
- 32. The method as in claim 31, further comprising the step of providing a block access code for allowing access to said plurality of codewords.

AMENDED CLAIMS

[received by the International Bureau on 17 January 2001 (17.01.01); original claims 22-32 replaced by new claims 22-33 (3 pages)]

- 21. A system as in claim 20, wherein said second data transferring means of said transceiver comprises a high power infrared light emitting diode and a phototransistor for sending and receiving data from said first transferring means of said in-car parking meter.
- 22. A system as in claim 21, wherein said transceiver is portable, said transceiver being carried by a parking enforcement official to read data from said in-car parking meter.

5

10

15

20

25

- 23. A system as in claim 21, wherein said transceiver is formed to receive said in-car parking meter as to block ambient light during communication between said first transferring means and said second transferring means.
- 24. A system as in claim 23, wherein said transceiver is positioned at an entrance to a parking facility.
- 25. A system as in claim 24, wherein said transceiver wirelessly transmits data from said parking facility to a remote location.
- 26. A system as in claim 19, wherein said display means is a liquid crystal display including a controllable segment, said segment allows light to pass through said display means when off and blocks light when said segment is on.
- 27. A system as in claim 26, further comprising a corner cube to reflect light back to its source, said corner cube being disposed behind said segment of said display means, whereby upon light being directed at said corner cube said segment will be turned on and off to passively transmit data from said in-car parking meter.
- 28. A system as in claim 27, further comprising an external receiver, said external receiver comprising a light point source and a photodetector which when directed toward said in-car parking meter passively receives information from said in-car parking meter.

29. A system as in claim 28, wherein said external receiver is potable, said external receiver being carried by a parking enforcement official to read data from said in-car parking meter.

30. A method of generating codewords to program an electronic apparatus with monetary credits, said method comprising the steps of:

generating a serial number associated with said electronic apparatus; providing a hardware based crypto-grade random number generator;

generating a first random number table from said crypto-grade random number generator;

5

10

15

20

generating a second random number table from said crypto-grade random number generator;

indexing said serial number to a first entry in said first random number table and to a second entry in said second random number table;

summing said first entry and said second entry resulting in a hexadecimal sum; and

converting said hexadecimal sum into a first seven digit binary coded decimal value codeword.

31. The method of claim 30, further comprising the step:

providing a second seven digit binary coded decimal codeword whereby said second codeword validates said first codeword.

- 32. The method as in claim 31, further comprising the step of providing a storage means for storing a plurality of codewords, said storage means comprises a microprocessor and non-volatile memory.
- 33. The method as in claim 32, further comprising the step of providing a block access code for allowing access to said plurality of codewords.